Claims

1. (original) A transition for delivering an electrical signal propagating on a coaxial cable to a substrate, comprising:

an input connector adapter configured to receive and retain a coaxial cable having a central conductor;

a housing that defines a cavity having an axis;

an airline conductor situated substantially parallel to the axis of the cavity and in electrical communication with the central conductor of the coaxial cable, wherein the airline conductor and the cavity are configured to form an airline having an impedance that is substantially the same as an impedance of the coaxial cable; and

an interconnect situated on the substrate and extending into the cavity and electrically connected to the airline conductor.

2. (original) The transition of claim 1, wherein the cavity is cylindrical.

3. (original) The transition of claim 2, wherein the interconnect includes a conductive puck.

4. (currently amended) The transition of claim 1, further comprising an output coaxial adapter configured to receive and retain a coaxial cable and couple the airline conductor to a coaxial output.

5. (original) The transition of claim 1, wherein the interconnect includes a conductive puck.

6. (original) The transition of claim 5, wherein the substrate is retained by the housing.

7. (currently amended) An apparatus for delivering an electrical signal from ~~a coaxial cable~~ an input coaxial cable to a substrate, comprising:

an airline that includes a central conductor having an input end and an output end;

means for securing the input coaxial cable to the input end of the central conductor and communicating the electrical signal to the central conductor; and

means for electrically connecting the substrate to the central conductor, situated within the airline; and

means for securing the output end of the central conductor to an output coaxial cable.

8. (currently amended) A method delivering an electrical signal to a substrate, comprising:

configuring an airline to receive the electrical signal at an airline input, wherein the airline includes a conductor and a cavity, and has a characteristic impedance corresponding to a characteristic impedance of the transmission line on which the electrical signal propagates; ~~and~~

contacting an interconnect region on the substrate to the airline conductor; and

delivering the received electrical signal from the airline input to an airline output.

9. (original) The method of claim 8, wherein the characteristic impedance of the airline is approximately equal to the characteristic impedance of the transmission line.

10. (original) The method of claim 8, wherein the characteristic impedance is about 50 Ohms and the transmission line is a coaxial cable.

11-33. (cancelled)

34. (new) The transition of claim 1, wherein the cavity defined in the housing includes a slot directed substantially perpendicular to the axis of the cavity.

35. (new) The transition of claim 1, wherein the impedance of the airline is substantially defined by dimensions of the housing cavity and the airline conductor.

36. (new) A transition for delivering an electrical signal propagating on a coaxial cable to a substrate, comprising:

a coaxial input configured to receive a coaxial input waveguide;

an airline defined by an airline conductor and an airline cavity;

an interconnect conductor situated in the airline cavity and configured to electrically couple a substrate to the airline conductor; and

a coaxial output configured to receive a coaxial output waveguide, wherein the airline conductor extends from the coaxial input to the coaxial output, and the airline is configured to have an impedance that substantially matches an impedance of at least one of the coaxial input waveguide and the coaxial output waveguide.

37. (new) The transition of claim 36, wherein the cavity is cylindrical.

38. (new) The transition of claim 36, wherein the interconnect includes a conductive puck.

39. (new) The transition of claim 36, wherein the substrate is retained by the housing.